



U.S. Department of Energy
Energy Efficiency and Renewable Energy

federal energy management program

Implementing Clean Energy Efficiency Projects at the U.S. Postal Service - Pacific Area

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USPS Facility Energy Data

- **35,000 Buildings**
- **350,000,000 sq. ft.**
- **23,388 BBTUs per year**
- **66,400 BTUs/sq. ft. in FY 2005**
- **4.7 million MWH, 5.7 million therms**
- **\$550,000,000 Annual Energy Cost**

Pacific Area: About 10% of above, except for energy cost (\$60 million, or about 14%)



Background

- **Capital Freeze, EPA Act & E.O 13123 requirements, NEMP & SEMP targets**
- **Established Inter Agency Agreement with Dept. of Energy / FEMP / LBNL for technical assistance**
- **Establish Area Energy Program Committee**
- **Developed Area Strategic Energy Management Plans**
- **Reduction goals based on EPA Act and E.O. requirements**



Shared Energy Savings

- **USPS decided not to use the DOE Super ESPC program (exempt from FAR)**
- **Resurrected postal version “Shared Energy Savings” purchasing contract**



Background

- **Collected data for 65 largest sites of 2,000**
 - 15 million of 30 million sq. ft. total
 - 50-70% of total energy consumption
- **Established reduction targets for FY 03 and beyond**
- **Awarded contracts to Viron / Chevron Energy Solutions and Honeywell (Oct 2002)**



Background

- **Developed tracking report for 10 Districts based on largest sites**
- **Formed District Energy Program Committees**
- **Introduced ESCOs at District EPC meetings**



Implementation

- **ESCOs evaluated list and prioritized groups of facilities**
- **Developed proposals for ECMs**
- **Worked closely with local committee to review technical and financial suitability of measure for each site**
- **Internal capital and external rebates used to bring ROI up (ten years)**



Implementation

- **Once agreed upon, local committee requested Contracting Officer to issue Delivery Order**
- **ESCO worked with site to develop schedule**
- **Once substantial completion, payments began**



Typical ECMs

- **Lighting: Hi Bay HID & T12 to T8, electronic ballasts and occupancy sensors, compact fluorescents, L.E.D. exit signs, HID parking fixtures retrofit**
- **Solar photovoltaic systems**
 - 406 kW Parking Canopy
 - 309 kW Roof Integrated / Tracking Canopy
- **250 kW Fuel cell**
- **CHP gas fired 1.5 MW cogeneration plant w/heat recovery to absorption chiller**



CFC Chiller replacement program

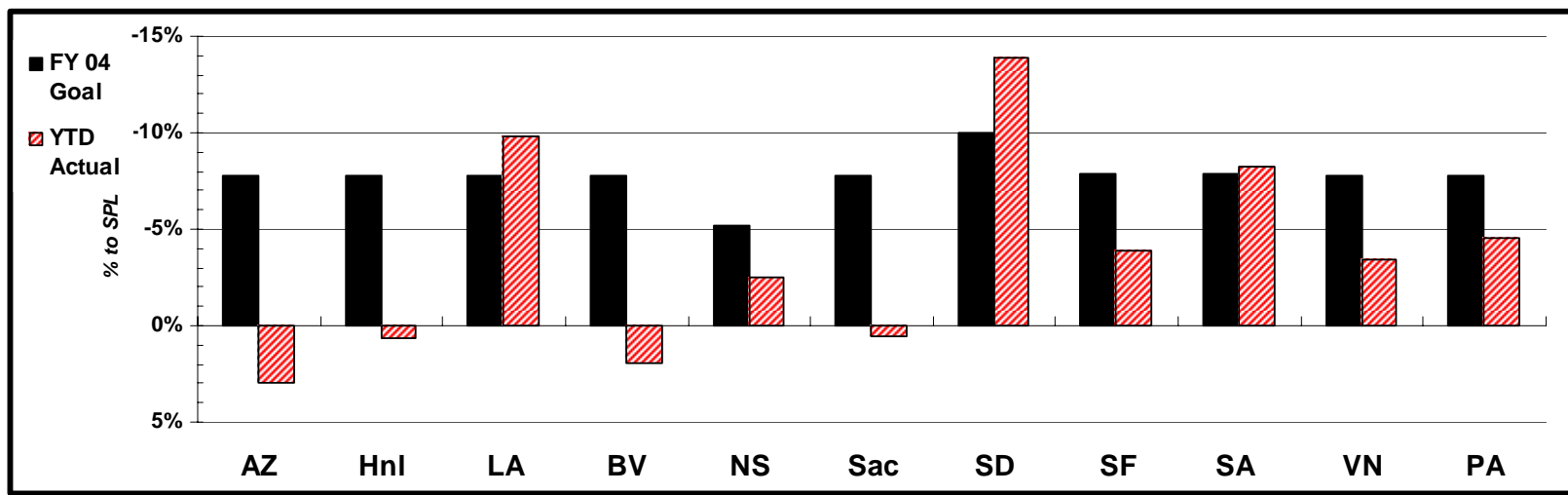
- Replace with high-efficiency, non-CFC
- Variable speed chilled & heating water pumps
Insulate mechanical room
- EMS re-commissioning and upgrade
- Insulate condenser water piping
- Rebalance exhaust fan
- Add & re-commission programmable thermostats

5,115 tons cooling = 11,705 lbs ODS reduced!



Results!

- 420 sites surveyed / 380 projects awarded
- \$108 million project value
- 92.3 million kWh saved annually
- 20,400 tons CO₂, 272 tons NO_x reduced





Future Projects

- **More solar photovoltaic systems**
 - 910 kW Roof – Oakland P&DC
 - 200 kW Roof Integrated – San Jose P&DC
- **CHP gas fired 1 MW cogeneration plant with heat recovery to absorption chiller – San Bernardino**
- **PV to Hydrogen to fuel FCVs?**

Total Distributed Generation: 4.3 MW!



Marina Processing Center (moved to LA)

***127 kW roof
mounted
non-
penetrating***







Sacramento Processing & Distribution Center

406 kW

***Parking
Lot***

***Fixed
Canopy***

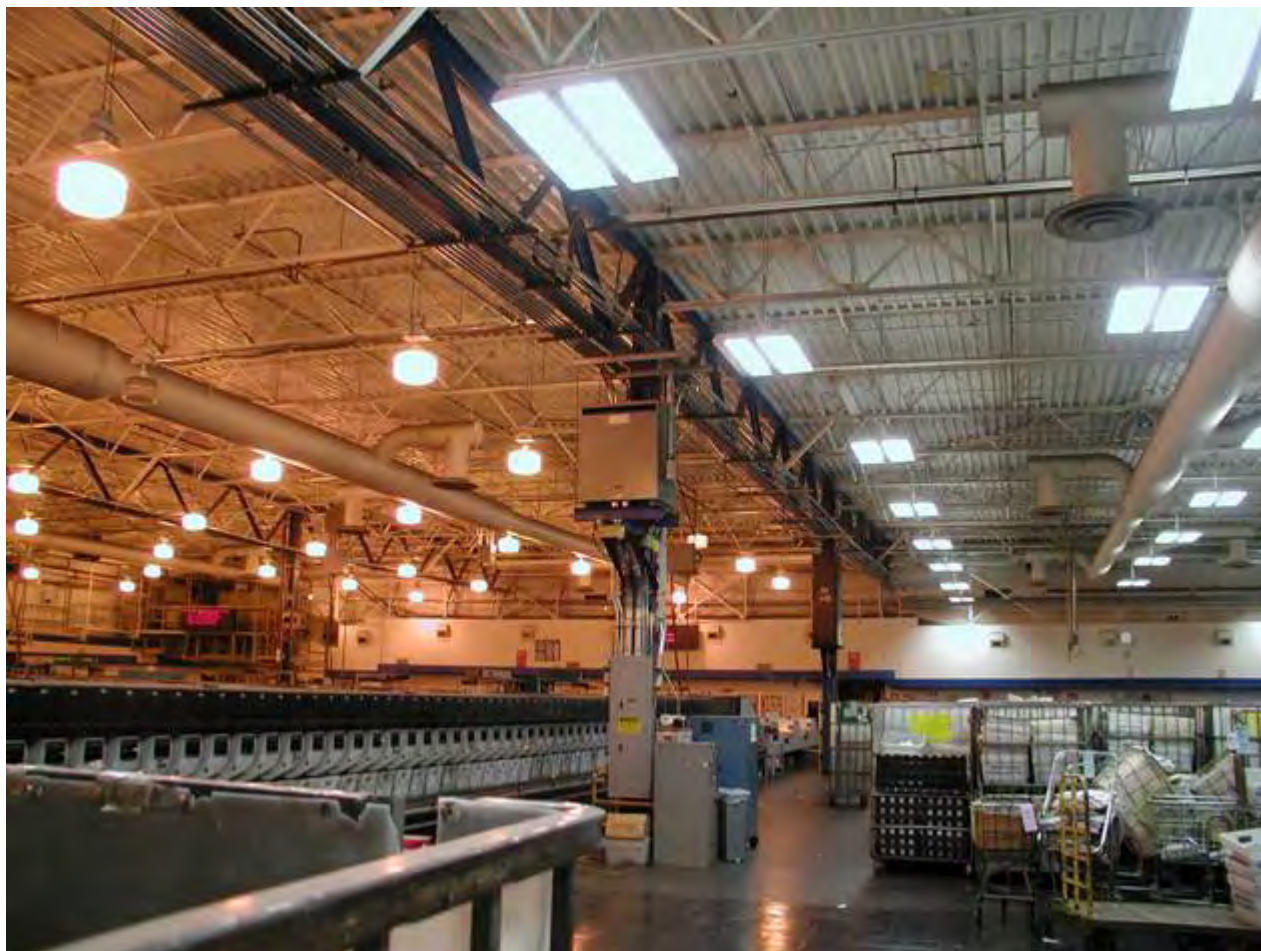






San Francisco Processing & Distribution Center

***T-8
fluorescents
replaced
older
technology***





San Francisco Processing & Distribution Center

210 kW

***Tracking
Parking
Canopy***





San Francisco Processing & Distribution Center

100 kW

***Thin-film
roof
integrated***





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Oakland Processing & Distribution Center

910 kW

***Roof
mounted
non-
penetrating
(rendition)***

